

BELL AVENUE BRIDGE
Spanning Bell Avenue at Conrail Railroad
Carnegie
Allegheny County
Pennsylvania

HAER No. PA-383

HAER
PA
2-CARN
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Northeast Field Area
Chesapeake/Allegheny System Support Office
National Park Service
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

HISTORIC AMERICAN ENGINEERING RECORD

BELL AVENUE BRIDGE

HAER NO. PA-383

Location: Conrail Railroad, Spanning Bell Avenue
Carnegie
Allegheny County, Pennsylvania
UTM: 17.577770.4474100
Quad: Pittsburgh West, PR1979 1:24,000

Date of Construction: 1880

Builder: Pittsburgh, Cincinnati and St. Louis
Railroad

Present Owner: CONRAIL

Present Use: Railroad bridge

Significance: Constructed in 1880 to replace an earlier wooden structure, the bridge provided an overpass for Bell Avenue in the Borough of Carnegie, Pennsylvania. The twin sandstone arches represent a bridge type that is rare survivor and the only example of this type in the Panhandle Historic District between Pittsburgh and Carnegie. The bridge was located at an important connection with the mainline and the Pittsburgh, Chartiers and Youghiogheny Railroad.

Project Information: During construction of the Phase I Airport Busway/Wabash HOV facility, the Port Authority of Allegheny County proposes a Federal Transit Administration project (PA 03-0227) to replace the bridge. In a Memorandum of Agreement to mitigate the adverse effect, the State Historic Preservation Officer stipulated documentation of the bridge. The bridge, a contributing structure within the Panhandle Historic District, was included on a National Register of Historic Places nomination form prepared by Christine Davis Consultants, Inc. in July of 1995.

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The Bell Avenue Bridge is a two-span stone basket arch bridge across Bell Avenue in the Borough of Carnegie, Allegheny County, Pennsylvania. The bridge carried the Panhandle Division of the Pennsylvania Railroad, and later CONRAIL, over Bell Avenue. A steep ridge rises above the bridge to the west and slopes down to Chartiers Creek which flows to the east.

The setting of the bridge, adjacent to Chartiers Creek and in the industrial zone of Carnegie, has been significantly altered since the time of its construction. The most important change occurred in the early 1950s when the bridge that carries the Penn-Lincoln Parkway over Chartiers Creek was constructed. To the west of the Bell Avenue Bridge, the Parkway bridge carries the four-lane highway over Bell Avenue and Arch Street while the second highway bridge carries the Parkway over Chartiers Creek. The highway bridge is elevated above Bell Avenue on concrete piers located approximately 100 feet south of the Bell Avenue Bridge.

Two segmental arches separated by a single stone pier form the Bell Avenue Bridge. The east side consists of square and rectangular sandstone blocks that form the arches, abutments and retaining wall. The quarry-faced ashlar stones display chisel drafts. The largest stones measure two feet in height and five feet in length. Keystones project from the voussoirs that form a ring course for the arches. The west side of the bridge has been pargetted with concrete. The bridge measures 54 feet in length and has two seams in the masonry of the interior walls indicating the bridge was expanded by 16 feet to the west and 10 feet to the east. The original arch measures 25 feet in length. The masonry used when the bridge was expanded duplicates the original stonework from 1880.

The attenuated stone abutment on the north side is slightly skewed and extends for 97 feet from the north side of the bridge where it terminates in a fill bed. A concrete deck measuring 8.2 feet has been added to top of the arches. A cribbing of railroad ties on the top of the stone supports the above railroad tracks. On the south side of the arches, a stone retaining wall projects from the arch by 3.5 feet and continues for 270 feet to a stone foundation wall for the former Honus Wagner signal tower or the "JC" Tower. The masonry of the abutments displays the same characteristics as that of the arches.

The curved approaches to the bridge were lined with stone curbing, however, the stone curbs have been replaced with concrete curbs on the northwest and southeast approaches, and a concrete sidewalk has been added on the southeast approach. The east approach to the bridge is landscaped with grass. On the west side, Rosslyn Road and a new access road join Bell Avenue at the approach to the bridge.

By 1905, four sets of tracks including the east- and west-bound freight tracks on the west, and the east- and west-bound passenger tracks on the east passed over the Bell Avenue Bridge. ¹ Today, only two of the tracks are active. The early 20th century tracks for the Street Railway trolley line that once passed beneath the north arch of the Bell Avenue Bridge have been removed. ²

Concrete supports for a signal bridge on either end of the bridge represent the railroad's communication system. The signal bridge itself is no longer extant. Two exposed utility lines cross the bridge along the tracks. Two telephone poles with five cross-arms and original insulators are located on the east side of the arches.

Bridge Construction

The original bridge at Bell Avenue was constructed on the mainline of the Pittsburgh and Steubenville Railroad in the former Chartiers Borough, now the Borough of Carnegie. The Borough of Carnegie was incorporated from two 19th century communities separated by Chartiers Creek. Chartiers Borough, located on the west side of the creek, was formed from Robinson Township, while Mansfield Borough, on the eastern bank, was established from Scott Township.

The directors of the Pittsburgh and Steubenville Railroad envisioned a rail connection between Pittsburgh's significant bituminous coal region, including the newly discovered resources in Carnegie, and the clay and coal resources in the Steubenville region. The railroad line, designed to replace the old Steubenville Turnpike, was constructed through the region in 1865. The former Rosslyn passenger railroad station was located to the north of the Bell Avenue Bridge.

The Bell Avenue Bridge was built in an industrial section of the former Chartiers Borough where the Pan Handle Railroad served the former Mansfield Coal and Coke Works. By 1879, the Grant mines (owned by the Mellon family), the Camp Hill Mine, the Fort Pitt Mines, and Pittsburgh Union Mines were located near the railroad in this area of Carnegie. ³ A bank of coke ovens, a bituminous mine, and a tipple for the works were situated near the Bell Avenue Bridge. The Pittsburgh Smelting Company and the Rosslyn Brick Company became two of many late 19th century manufacturing firms to locate in this section of Carnegie. Housing to accommodate the workers for this industrial complex was constructed to the east of the bridge. ⁴

The existing Bell Avenue Bridge was constructed in 1880 to replace an earlier wood truss bridge. The first bridge would have been replaced when the railroad expanded to a double-track system in 1873. Presumably, the wood truss was the second bridge on the

site. Then, in 1880, the Pittsburgh, Cincinnati and St. Louis Railroad (PC&StL) replaced five wood Howe truss bridges with stone arches as part of a company plan to improve the system.⁵ On June 21, 1880, the PC&StL Railroad and the Borough of Chartiers executed an agreement to rebuild the bridge over Bell Avenue within a four-month time period. The two stone arches measured 22 feet of clear span each, a clear height of 13.2 feet in the middle of the eastern span at the upper side of the bridge and 16 feet clear height in the middle of the western span at the upper side. M.J. Becker, Chief Engineer of the Panhandle, submitted a "plan of arches" to the Chartiers Borough Council on April 30, 1880. The agreement was signed by J. N. McCullough, Third Vice-President of the Railroad, and S.B. Liggett and W. C. Parker of the Chartiers Borough.⁶ The Bell Avenue Bridge later became known as Bridge #10 on the Panhandle Division in the East Ohio Grand Division of the Pennsylvania Railroad Company.

The Bell Avenue Bridge was located at a significant connection point in the Panhandle Division where the mainline linked with the Pittsburgh, Chartiers and Youghiogheny Railway (PC&Y) which was used to re-route or detour freight trains around the Cork Run Tunnel (or Berry Street Tunnel). Trains passed through the narrow and restricted tunnel located between the City of Pittsburgh and Ingram. The Rosslyn Connection formed the spur between the two railroads and joined the Panhandle's mainline less than 50 feet from the Bell Avenue Bridge. The mainline continued west through Carnegie while the PC&Y continued south along Chartiers Creek. The PC&Y was formed the year after the Bell Avenue Bridge was reconstructed as a stone arch. The nineteen-mile line originally transported bituminous coal between the south side of Pittsburgh and Carnegie. As the region experienced a significant expansion episode with the construction of new industries near the Bell Avenue Bridge, the bridge was doubled in size to accommodate four tracks. This expansion took place before 1905.⁷ The PC&Y Railroad was soon expanded and a large freight yard, the Scully Yards, were constructed west of Bell Avenue in 1905 to accommodate the increase in freight traffic.

Maintaining safety and efficient switching between the passenger and freight lines was of great importance in this section of the mainline. In response to an increase in rail traffic, telegraph poles on the south side of the tracks were rebuilt in 1883.⁸ A wooden switching tower constructed west of Bell Avenue was replaced in 1950 with the Honus Wagner Tower, named after the famous Pittsburgh Pirates baseball player who resided in Carnegie. The tower connected with the Esplen and Corliss Towers, located on the Ohio River segment of the railroad, to provide an interlocking fail-safe signal for the line. The Wagner Tower was demolished when the Parkway West Bridge ramps were constructed.

The Rosslyn Station on Arch Street was located behind the present-day Izzy Miller Furniture Warehouse on Arch Street in the Borough of Carnegie. The two-story Victorian station served passengers from the 1870s through the 1940s. A serious fire occurred there in 1909, but the station was repaired and continued to be used for another 30 years. When the building was finally demolished, the foundation stones were hauled to Carnegie Park to be used for the construction of a picnic shelter.⁹ In 1934, the Carnegie section of the Chartiers Branch was retired due to a decrease in traffic. The previous year, the old freight station at Carnegie closed.¹⁰

SIGNIFICANCE

Constructed in 1880 to replace an earlier wood truss, the Bell Avenue Bridge provided an overpass for the Panhandle Railroad over Bell Avenue in Carnegie. The twin sandstone arches represent a bridge type that is a rare survivor and the only example of this type in the Panhandle Historic District between Pittsburgh and Carnegie. The bridge was located at an important connection between the mainline and the Pittsburgh, Chartiers and Youghiogheny Railroad.

REPOSITORIES

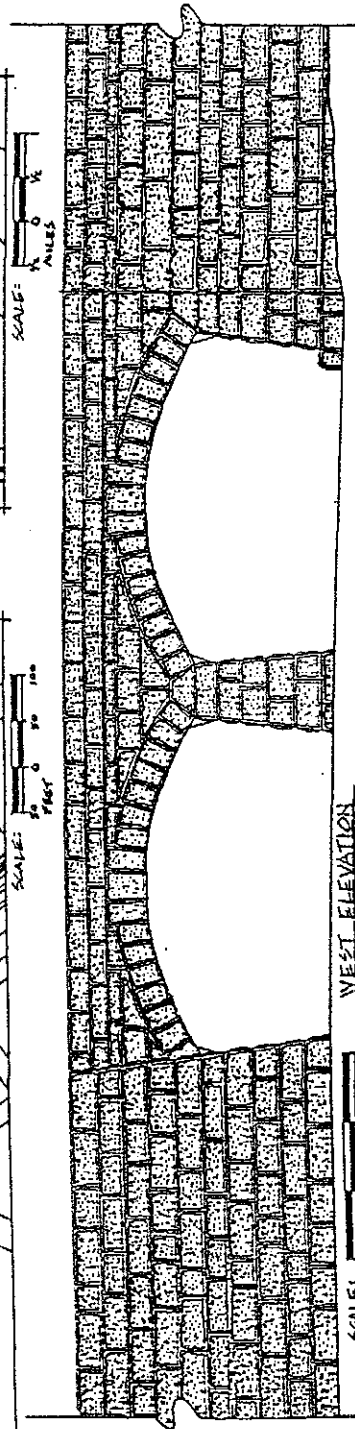
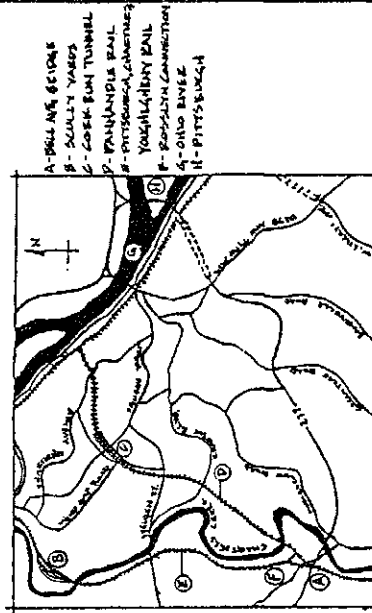
Records housed in the following repositories were used in the preparation of this report: the Library of Congress, the Carnegie Library of Pittsburgh, Hillman Library and Darlington Library (both of the University of Pittsburgh), the library of The Historical Society of Western Pennsylvania, the Pattee Library of The Pennsylvania State University, and the Pennsylvania State Archives. Research conducted at the Labor Archives in the Pattee Library of The Pennsylvania State University involved a total of 32 boxes of records from the CONRAIL collection. No drawings or historic photographs of the Bell Avenue Bridge were found in these repositories.

ENDNOTES

1. Hopkins, G.M. compiler. 1905, p. 29.
2. Pennsylvania Railroad Collection. Map dated December 19, 1929. Box 56 Folio 8.
3. Newton, J.H., et.al. History of the Pan-handle. West Virginia: J.A. Caldwell, 1879, vi.
4. The Rosslyn Industrial Complex including the Pittsburgh Smelting Company and the Rosslyn Brick Company were submitted as part of a Determination of Eligibility Report. The district was determined not eligible for the NRHP.
5. Pittsburgh, Cincinnati & St. Louis Railway Company. 13th Annual Report of the Pittsburgh, Cincinnati, and St. for the Year Ending December 31, 1881. Philadelphia: Review Printing House, 1882. The five bridges were Bridges #4, 44, 57, 71, and 72.
6. Church, S.H. Corporate History of the Pennsylvania Lines West of Pittsburgh. Volume XIV, 1918, p. 1339-40.
7. Pennsylvania Railroad Collection. Untitled map, Box 56 Folio 8.
8. Pittsburgh, Cincinnati & St. Louis Railway Company. 16th Annual Report for the Year Ending December 31, 1883. Philadelphia: Review Printing House, 1884. p. 102.
9. Undated newspaper clipping in "Railroads" file at Carnegie Library in Carnegie.
10. Pennsylvania Railroad Collection. Box 56:Folio 10; Box 256: Folio 2539.

BIBLIOGRAPHY

- Church, S.H. Corporate History of the Pennsylvania Lines West of Pittsburgh. Volume XIV, 1918.
- Davis, Christine. "Panhandle Historic District. National Register of Historic Places Nomination Form." Draft submitted to the Port Authority Transit of Allegheny County. July, 1995.
- Hopkins, G.M. compiler. Atlas of the City of Pittsburgh Philadelphia: G.M. Hopkins. 1905, p.29
- Newton, J.H. et.al. History of the Pan-handle. West Virginia: J.A. Caldwell, 1879, vi.
- Pennsylvania Railroad Collection. The Pennsylvania State University. Fred Lewis Pattee Library.
- Pittsburgh, Cincinnati & St. Louis Railway Company. 16th Annual Report for the Year Ending December 31, 1883. Philadelphia: Review Printing House, 1884.
- Pittsburgh, Cincinnati & St. Louis Railway Company. 13th Annual Report of the Pittsburgh, Cincinnati, and St. for the Year Ending December 31, 1881. Philadelphia: Review Printing House, 1882.
- Sanborn Insurance Company. Carnegie. New York: Sanborn Insurance Company, 1896.



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JUNE 1995